UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,353	01/28/2004	Jim Paikattu	200314435-1	3291

22879 7590 08/08/2007

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
HOLTON, STEVEN E	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
08/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,353	PAIKATTU ET AL.	
	Examiner	Art Unit	
	Steven E. Holton	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23 and 35-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *36-38* is/are allowed.

6)☒ Claim(s) *1-23 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 24-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/10/07.

Specification

2. The disclosure is objected to because of the following informalities: There is no mention of Figs. 7 and 8 in the Brief Description of Drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt (USPN: 3539995) in view of Yu et al. (USPgPub: 2004/0016923), hereinafter Yu.

Regarding claim 1, Brandt discloses an array of optical sensors (Fig. 1, element 11) with at least a first optical sensor defining at least one row element and at least a second optical sensor defining at least column element (Fig. 1, the top left sensor

defines a row element of row 1, the bottom right sensor defines a column element of column 10); an array of conductive traces defining row and column signal pathways (Fig. 1, elements Y1-Y11 and X1-X10), and excitation of the sensors generates signals on the array of conductive traces (col. 3, lines 15-63).

However, Brandt does not expressly disclose a transparent substrate on which all of the sensors and traces are arranged.

Yu discloses an array of optical microswitches (Figs. 2C and Fig. 4) that are formed on a substrate (Fig. 2, element 26). Yu further discloses that the substrate can be of a suitable transparent or semitransparent material (paragraph 39).

At the time of invention it would have been obvious to one skilled in the art to form an array of optical sensors as defined by either Brandt or Yu with traces and position calculating circuitry described by Brandt onto a transparent substrate as described by Yu. The rationale for would be for applying the known sensor array of Brandt onto a selected substrate of the various types suggested by Yu. It would have been obvious that the sensor array of Brandt could be adapted to work with a more modern substrate of the types chosen by Yu for a similar type of optical sensor array. Thus, it would have been obvious to combine the teachings of Brandt and Yu to provide an optical sensor array on a transparent substrate capable of generating signals on the conductive traces upon excitation by electromagnetic radiation.

Regarding claim 2, Brandt discloses the first optical sensor outputting a row signal (Fig. 1, signal line Y11 would carry an electronic row signal related to the row of the first sensor; col. 2, lines 31-44; col. 3, lines 15-51).

Regarding claims 3 and 4, Brandt discloses the second optical sensor outputting a column signal (Fig. 1, signal line X10 would carry an electronic column signal related to the column of the second sensor; col. 3, lines 15-51).

Regarding claim 5, Yu discloses the substrate being made of glass (paragraph 39).

Regarding claims 6 and 7, Yu discloses the optical microswitches being responsive to visible, ultraviolet and infrared light (paragraph 41).

Regarding claim 8, Brandt discloses the first and second optical sensors output signals defining a first and second state (col. 3, lines 15-51). The Examiner notes that the sensors of Brandt output a selected and unselected signal along the conductive traces. The selected and unselected states are two different signal states for the row and column signals.

Regarding claims 9 and 10, the signal levels of the first and second state must differ in order for the signal processing unit of Brandt to determine the state of the signal. Therefore, the first and second states have first and second signal levels would be inherent to the signals.

Regarding claims 11 and 17, the Examiner notes that these claims differ from claim 1 only with the inclusion of a display device and a computer processing device. The Examiner takes Official Notice that light spot indicators using arrays of optical sensors associated with a display device and computer system are well known in the art. It would be obvious to one skilled in the art that an optical sensor array made from

the combination of Brandt and Yu could be used for indicating locations on a computer display for interface with the computer device.

Regarding claims 12 and 18, Brandt discloses the first sensor having output signals defining a first and second state and providing a row signal (col. 3, lines 15-51). The Examiner notes that the sensors of Brandt output a selected and unselected signal along the conductive traces. The selected and unselected states are two different signal states for the row signals.

Regarding claims 13 and 19, Brandt discloses the second optical sensors output signals defining a first and second state and for outputting a column signal (col. 3, lines 15-51). The Examiner notes that the sensors of Brandt output a selected and unselected signal along the conductive traces. The selected and unselected states are two different signal states for the column signals.

Regarding claims 14 and 20, Brandt discloses the signal state switches upon excitation by electromagnetic excitation (col. 3, lines 15-51).

Regarding claims 15 and 21, Brandt discloses the signal state switches upon excitation by electromagnetic excitation (col. 3, lines 15-51).

Regarding claim 16, Brandt discloses row and column output (Fig. 1, elements Y1-Y11 and X1-X10).

Regarding claims 22, 23 and 35, the Examiner notes that this claim is similar to claim 1 except that the optical sensor defines at least one row and column element. The Examiner notes that the sensors of Brandt output both row and column signals

along the row and column pathways based on excitation by a light source. Therefore, the combination of Brandt and Yu can read on claims 22, 23, and 35.

Allowable Subject Matter

4. Claims 36-38 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to a optical sensor array input device. Independent claim 36 identifies the uniquely distinct features "each pixel circuit comprising at least one optical sensor having a row and column output and wherein the row and column output share a common output node of the optical sensor". The closest prior art, Brandt, Yu, and Boer et al. (USPN: 6995743) disclose pixels with optical sensors that provide row and column outputs, but do not disclose the row and column outputs being from a common nodes of the optical sensor, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Independent claim 38 identifies the distinct features "each pixel circuit comprising a first optical sensor and a second optical sensor; the first optical sensor comprising a row output node and the second optical sensor comprising a column output node". The closest prior art, Brandt, Yu, and Boer et al. (USPN: 6995743) disclose pixels with optical sensors that provide row and column outputs, but do not disclose multiple optical

sensors in a single pixel for separate row and column output sensors, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven E. Holton
Division 2629
August 2, 2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER